National Institute of Environmental Health Sciences

Elevation of cardiac troponin I during non-exertional heat-related illnesses in the context of a heatwave

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Abstract:

INTRODUCTION: The prognostic value of cardiac troponin I (cTnI) in patients having a heat-related illness during a heat wave has been poorly documented. METHODS: In a post hoc analysis, we evaluated 514 patients admitted to emergency departments during the August 2003 heat wave in Paris, having a core temperature >38.5 degrees C and who had analysis of cTnI levels. cTnI was considered as normal, moderately elevated (abnormality threshold to 1.5 ngxmL-1), or severely elevated (>1.5 ngxmL-1). Patients were classified according to our previously described risk score (high, intermediate, and low-risk of death). RESULTS: Mean age was 84 +/- 12 years, mean body temperature 40.3 +/- 1.2 degrees C. cTnI was moderately elevated in 165 (32%) and severely elevated in 97 (19%) patients. One-year survival was significantly decreased in patients with moderate or severe increase in cTnI (24 and 46% vs 58%, all P < 0.05). Using logistic regression, four independent variables were associated with an elevated cTnI: previous coronary artery disease, Glasgow coma scale 120 micromolxL-1, and heart rate >110 bpm. Using Cox regression, only severely elevated cTnI was an independent prognostic factor (hazard ratio 1.93, 95% confidence interval 1.35 to 2.77) when risk score was taken into account. One-year survival was decreased in patients with elevated cTnI only in high risk patients (17 vs 31%, P Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.04). CONCLUSIONS: cTnI is frequently elevated in patients with non-exertional heat-related illnesses during a heat wave and is an independent risk factor only in high risk patients where severe increase (>1.5 ngxmL-1) indicates severe myocardial damage.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2911736

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Health Professional

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : France

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Injury

Medical Community Engagement:

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content